

Serial No. 10/072,907

Docket No.: 1567.1022

IN THE SPECIFICATION:Please **AMEND** paragraph 0022 as follows:

[0022] According to lithium-sulfur batteries of the present invention, the positive electrode 3 comprises an electron-conductive path and an ion-conductive path, so it exhibits both electronic conductivity and ionic conductivity. Active pores, where active sulfur is filled during an electrochemical reaction of the battery, have an average size of up to 20 μ m. Preferably, the average size is up to 10 μ m, and more preferably up to 5 μ m. When the average size of active pores is more than 20 μ m, a viscous polysulfide solution easily diffuses to an electrochemically inactive ~~arease-area~~ so as to ultimately decrease the capacity of the battery. Further, the effectiveness of the electrochemical reaction is reduced due to the decrease of the reaction surface area with the ionic and electronic conductivity.

Please **AMEND** paragraph 0049 as follows:

[0049] Sublimed sulfur was pulverized in a solution of isopropyl alcohol with a ball mill to a particle size of 5 μ m. The pulverized sulfur powder was mixed with a conductive agent and a binder with the ball mill to provide a slurry in which the particles were uniformly dispersed. Carbon black and polyethylene oxide (Molecular weight: 5,000,000) were used as the conductive agent and the binder, respectively. The sulfur, the conductive agent, and the binder were mixed in the weight ratio of 60:20:20 in acetonitrile to prepare a viscous slurry. The slurry was coated on an aluminum foil using a doctor ~~bladese-blade~~ so that a positive electrode was obtained. The energy density of the resultant positive electrode was 1.0 mAh/cm². Using a lithium metal with a thickness of 130 μ m as a counter electrode, and 1 M LiSO₃CF₃, 1,3-dioxolane/diglyme/sulfolane/dimethoxy ethane (50/20/10/20, by volume ratio) as an electrolyte, a coin-type cell was fabricated in a glove box in which moisture was controlled.

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Please AMEND paragraph 0052 as follows:

[0052] A slurry was prepared by mixing dibutyl phthalate, a conductive agent, and a binder in the weight ratio of 1:1:1. The slurry was coated on a current collector, dried, and then any residual dibutyl phthalate was removed with ether so ~~etherse~~ that a positive electrode was obtained. Under an inert gas atmosphere, 6M(S) of Li_2S_8 was prepared by reacting Li_2S with S_8 in a solution of dimethoxy ethane with a ball mill to provide a polysulfide solution. Using lithium metal with a thickness of 130 μm as a counter electrode, and a polysulfide solution as a catholyte, but not using an additional electrolyte, a coin-type cell was fabricated in a glove box in which moisture was controlled.

Please AMEND paragraph 0052 as follows:

[0056] Fig. 2 shows a surface state of a positive electrode prepared prior to fabrication of the lithium-sulfur cell in Example 1. Particles of the conductive agents are shown coagulated around the sulfur. Figs. 3A and 3B show surface states of positive electrodes which are obtained by disassembling the cells prepared according to Example 3 and Comparative Example 1, respectively, after two charging-discharging cycles and then washing the electrodes with dimethoxy ethane. In Figs. 3A and 3B, the pores indicate the sites where the sulfur particles dissolve out. As shown in Fig. 3A, when the positive electrode is prepared using the positive active material comprising sulfur, the reactive surface area grows broader so ~~broaderse~~ as to improve the capacities of the cells.